

# Receiving Report

Date: 15/07/9

Batch No: 131410

Supplier: KLY

Part P/O: 27254

Packing Slip: Yes  No   
 Invoice: Yes  No   
 Receipt: Cash  Cr   
 New Supplier: Yes  No

Release Note Attached: Yes  No  N/A   
 Waybill Attached: Yes  No   
 Shipment Complete: Yes  No  N/A   
 QC16 Inspection:   
 Work Order:

## Discrepancies

Part Number	Description	Quantity Ordered	Quantity Rec'd	Quantity Short	Quantity Inspected	Quantity Rejected	Comment / NCR Number

Initials of Receiver

QC12

*SP*

Production/Admin:

Date

Received/Costing

Initial

Location



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO27256**

Purchase Order Date 1/28/2015  
PO Print Date 1/28/2015

Page Number 1 of 2

Order From :  
KLX INC.  
88289 EXPEDITE WAY

VU-KLX01

Ship To : DART AEROSPACE LTD  
1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

CHICAGO, IL 33172  
USA

Contact Name	Buyer	Chantal Lavoie
Vendor Phone	Customer POID	
	Customer Tax #	10127-2607
Ship To Contact	Terms	Net 30
Ship To Phone	Currency	USD
Ship Via:	FOB	Destination-Collect
Ship Acct:		

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
<b>Line Comments</b>							
<b>Delivery Comments</b>							
1	80-004-2-8	INSERT	1/29/2015 Yes 1/29/2015	20.00 Each		\$3.25	\$65.00
2	MS24694-S50	Screw	1/29/2015 Yes 1/29/2015	500.00 Each		\$0.08	\$40.00
3	MS21209F7-15	Heli-Coil, Locking	1/29/2015 Yes 1/29/2015	200.00 Each		\$0.52	\$104.00

Note:

SP1501-29



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.KLXaerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO27256**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
4	200	EA	AN4C6A		68619	MAC PASTENERS	0RFT4		

  
Jason Lewis  
Senior Director, Global Quality

01/28/15

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

CUSTOMER: B/E AEROSPACE

PO: 0RAE84

PART NUMBER: AN4C6A

REV: 3

LOT NUMBER: 68619

MANUFACTURED QUANTITY: 43,000

MILL HEAT NUMBER: 571573

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

**MERCURY FREE CERTIFICATION**

MacFasteners certifies that the parts referenced in the above lot number  
do not contain Mercury or Mercury compounds, and were  
manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC  
FASTENERS within the United States, and were processed in accordance with all applicable drawings and  
specifications. Objective evidence of compliance is on file, subject to examination upon request.

Mac Fasteners is a DISC QSLM approved Manufacturer - CAGE Code 0RFT4  
Mac Fasteners is an Airbus approved Supplier - 203399

DATE: 10/31/14

  
QUALITY ASSURANCE REPRESENTATIVE

**MAC FASTENERS, INC.  
1110 EAST ENTERPRISE  
OTTAWA, KS 66067**

# **CHEMICAL & PHYSICAL TEST REPORT**

CUSTOMER	PO NUMBER	MFG QUANTITY	DATE
B/E AEROSPACE	ORAE84	43,000	10/31/14
PART NUMBER	REV	LOT NO	PROCUREMENT SPEC
AN4C6A	3	68619	NASM6812

MATERIAL TYPE 431				MATERIAL SPECIFICATION ASTM A493				MILL HEAT NUMBER 571573				SUPPLIER CARPENTER		
C .16	Si .53	Mn .63	P .016	S .002	Cu	Ni 1.55	Cr 16.1	Mo	V	B		Fe	Al	Ti
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn				Other	

## MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	DOUBLE SHEAR STRENGTH POUNDS / PSI
6,430	
6,450	
6,360	
6,490	
6,300	
MIN. REQ.	4,080
MIN. REQ.	

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Apppearance	<input checked="" type="checkbox"/>

Thread Inspection	System <input type="checkbox"/>	System <input checked="" type="checkbox"/>	System <input type="checkbox"/>
FED-STD-H28/20 - ASME B1.3	21	22	23

## TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
ACTUAL RESULTS	
29 - 31 HRC	
NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	<input checked="" type="checkbox"/>
Liquid Penetrant Inspection per ASTM E1417	<input type="checkbox"/>
Head Marking	<input checked="" type="checkbox"/>
Fatigue Strength	<input type="checkbox"/>
Stress Durability Test NASM1312/5	<input type="checkbox"/>
Stress Rupture Test	<input type="checkbox"/>
Magnetic Permeability ASTM A342 Less than 2.0	<input type="checkbox"/>

### **Quality Assurance Representative**

# Paulo Products Co Heat Treat Certification

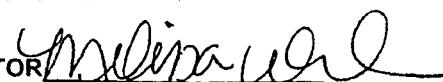
PART NUMBER	PO #	LOT/ JOB #	QTY	NET WT	MTL	HRC REQ'D	# OF SAMP	PAULO ORDER #	RESULTS	*AUSTENITIZE*		*TEMPER*	
										EQUIP/ CYCLE ID	TEMP/ TIME	EQUIP ID	TEMP/ TIME
AN3C4A	105203	65306	40,000	315.8	431	26- 32	8	1281712-01	27 - 30 HRC	1204/178216-1	1875±25°/50min	1233	1175±15°/4hrs
AN173C4	105205	72223	1,000	8.6	431	26- 32	8	1281712-02	26 - 30 HRC	1204/178216-1	1875±25°/50min	1233	1175±15°/4hrs
AN4C25	105404	72094	3,000	140.6	431	26- 32	8	1282407-09	26 - 32 HRC	1204/178216-1	1875±25°/50min	1233	1175±15°/4hrs
AN4C6A	105406	68619	50,000	739.2	431	26- 32	8	1282407-10	29 - 31 HRC	1204/178216-1	1875±25°/50min	1233	1175±15°/4hrs

## CERTIFICATION

WE CERTIFY THAT THE ABOVE REFERENCED PARTS WERE HEAT TREATED IN ACCORDANCE WITH AMS2759 AND CUSTOMER REQUIREMENTS. SAMPLES HAVE BEEN TESTED TO VERIFY HARDNESS AS SPECIFIED PER CUSTOMER REQUIREMENTS. PAULO PRODUCTS, INC. IS A NADCAP CERTIFIED PROCESSOR.

fmac\_nadcap\_cert\_log\_ps1001

INSPECTOR



DATE 10/17/14

APPROVED BY



Results: \*\* denotes (Customer Accepted AS-IS – Deviation on File)

# DE TRAY

## Plating Works

<b>Specialized Electro-Plating and Polishing</b>	
<b>Nickel</b>	<b>Passivate</b>
<b>Copper</b>	<b>Bright Dip</b>
<b>Decorative Chrome</b>	<b>Strip Copper</b>
<b>Satin Chrome</b>	<b>Descale</b>
<b>Zinc</b>	
<b>Cadmium</b>	

**10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052**  
**Phone (816) 252-8411 Fax (816) 252-8527 • E-mail: DeTrayPlating@Aol.com**

#### Passivate Treatment per AMS2700 Method 1, Class 4

**CUSTOMER:** Mac Fasteners      **Lot#:** 68619  
**PART NUMBER:** AN4C6A  
**PROCUREMENT SPECIFICATION:** n/a  
**OTHER CONTRACTURAL REQUIREMENTS:**  
**MATERIAL:** 431  
**QUANTITY:** 705 lbs  
**INVOICE NUMBER:** 184693

### **Certification Statement:**

We certify that the above referenced lot was processed, tested, and inspected in accordance with AMS2700 Method 1, Class 4 and part standard.

## DE TRAY PLATING WORKS

NAME: \_\_\_\_\_

**JOB TITLE: VICE-PRESIDENT**

DATE: 10/30/2014

CERTIFICATE OF TESTS  
CERT SERIAL# 000936670

ABNAHMEPRUEFZEUGNIS

CERTIFICAT DE CONTROLE



**CARPENTER**

Carpenter Technology Corporation  
101 West Bern Street, Reading, Pa. 19601  
Tel: (610) 208-2000 (800) 338-4592

07/09/14  
CUSTOMER/BESTELLER/CLIENT

MAC FASTENERS INC

1110 E. ENTERPRISE  
OTTAWA KS 66067

- THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47.
- THE VALUES AND OTHER TECHNICAL DATA REPRESENT THE RESULTS OF ANALYSES AND TESTS MADE ON SAMPLES COLLECTED FROM THE TOTAL LOT. ORIGINAL DATA RECORDS CAN BE TRACED BY REFERENCE TO THE CARPENTER ORDER NUMBER.
- MATERIAL IS MANUFACTURED FREE FROM MERCURY, RADIUM, ALPHA AND GAMMA SOURCE CONTAMINATION.
- THIS DOCUMENT SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN CONSENT OF CARPENTER TECHNOLOGY CORPORATION.

SELLER/VERKAUFER/VENDEUR PAGE 1 OF 1

BOL

CUSTOMER ORDER NO./BESTELL-NR./N° DE COMMANDE	CARPENTER NO./WERKS-NR./N° DE REFERENCE INTERNE	DATE/DATUM/DATE	WEIGHT/GEWICHT/POIDS
92916	W94092	07/09/14	6624.000

HEAT NUMBER / SCHMELZE-NR. / N° DE COULEE: 571573

PRODUCT DESCRIPTION: TYPE 431 ANNEALED COLD FINISH SEAM FREE C HDG SC2 STRAND  
CU/SOAP TENSILE MAX 115.0 KSI AIM: MIN 100.0 MAX 110.0  
PART NUMBER: 431-.247

SPECIFICATION: ASTM-A493-09 (REAPPROVED 2013)

SIZE 0.247000 IN. ( 6.27 MM) RD WIRE

PRIMARY HEAT CHEMISTRY(WT%): (TEST METHOD IS SHOWN IN PARENTHESIS)

C (COM)	MN(XRF)	SI(XRF)	P (XRF)	S (COM)	CR(XRF)
0.16	0.63	0.53	0.016	0.002	16.1

NI(XRF)

1.55

THIS HEAT MELTED BY THE ELECTRIC ARC/AOD PROCESSES

TENSILE AS SHIPPED, KSI(MPA) 99.0( 683)

MATERIAL HAS BEEN MELTED AND MANUFACTURED IN THE USA WHICH IS A QUALIFYING COUNTRY TO DFARS REQUIREMENTS 252.225-7014 WITH ALTERNATE 1 FOR QUALIFYING COUNTRY 225.872.1, SUPERSEDED BY DFARS REQUIREMENTS DFARS 252.225-7008 AND 252.225-7009.

THIS ORDER WAS MANUFACTURED IN ACCORDANCE WITH CARPENTER SPECIALTY ALLOYS OPERATIONS QUALITY PROGRAM MANUAL, REVISION 31 DATED 09/03/13.

CARPENTER'S QUALITY MANAGEMENT SYSTEM WAS REGISTERED AS OF NOVEMBER 24, 2013 TO THE REQUIREMENTS OF ISO 9001:2008 APPROVAL CERTIFICATE 13-1996R BY PERFORMANCE REVIEW INSTITUTE. THIS CERTIFICATE OF TEST IS TYPE 3.1 PREPARED IN ACCORDANCE WITH EN 10204 (DIN 50049). WE HEREBY CERTIFY THAT THE ABOVE TEST DATA ARE IN ACCORDANCE WITH THE PURCHASE ORDER AND SPECIFICATION REQUIREMENTS, AS DOCUMENTED IN THIS CERTIFICATE OF TESTS.

TEST METHODS ARE PER THE ASTM STANDARDS ON FILE AND IN EFFECT AT TIME OF ORDER ACCEPTANCE, STANDARD PRACTICES, OR AS AGREED UPON BETWEEN CARPENTER & CUSTOMER.

GARY BROWN  
MANAGER - SPECIFICATIONS/CERTIFICATIONS  
CARPENTER TECHNOLOGY CORPORATION

*Gary Brown*

This certification is made to the customer printed on this form. Carpenter neither makes, nor assumes responsibility for, any representation or certification to other parties.  
Die vorliegende Zertifizierung ist nur für den in diesem Formular genannten Kunden gültig. Carpenter übernimmt gegenüber Dritten keinerlei Haftung für die ausgewiesenen Daten oder Zertifizierungen.  
Ce certificat est uniquement valable pour le client dont le nom est imprimé sur ce formulaire. Carpenter n'assume pas de responsabilité pour une certification vis-à-vis d'une tierce personne.



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.KLXaerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO27256**

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
1	20	EA	80-004-2-8		51966	YOUNG ENGINEERS	56958		

  
Jason Lewis  
Senior Director, Global Quality  
01/28/15



# The YOUNG ENGINEERS, Inc.

engineering • manufacturing • aerospace fasteners

25841 Commercentre Drive, Lake Forest, California 92630 USA  
 Mail Add: PO Box 278, Lake Forest, California 92609-0278 USA  
 (949) 581-9411 Fax (949) 583-7662  
 email: sales@youngengineers.com

## CERTIFICATE OF CONFORMANCE

Packing Slip 51490  
 Customer Purchase Order 0SWY32  
 Sales Order 30250  
 Ship Date 2/26/2014

Page Number 1

**Bill To** 2030

B/E AEROSPACE INC  
 CONSUMABLES MANAGEMENT  
 PO BOX 025263  
 MIAMI, FL 33102-5263  
 USA

**Ship To**  
 B/E AEROSPACE INC  
 9835 NW 14 STREET  
 MIAMI, FL 33172  
 USA

Line Nbr / Cust Ln	Item ID / Alt Item ID	Description	Lot Number	Lot Trans Qty
1	TYE3002-3-8	10-32 Blind Thrd, Snap In, Alloy Stl, .010-.019 Skin Thickness, Self-Lock, .500OD X .455OAL	51966	2,500
1	80-004-2-8	Rev. V		
2		Test Report		
2				

Special Inst FedEx Acct 0331-0149-0

**The use of Class 1 Ozone depleting substances; nor the use of Mercury, Mercury compounds or Mercury Bearing Instruments, and/or equipment, have not been used in the design, testing, manufacture, assembly, Integration, handling, packaging of this product.**

**The items(s) which are identified within this certification have been reviewed and verified for compliance to those requirements specified within DFARS 252.225.7014 ALT 1 and DFARS 252.225.7009**



The parts contained in this shipment have been manufactured and inspected in accordance with TSO-C148. The conditions and tests required for TSO approval of this article are minimum performance standards. Aircraft fasteners approved under this TSO are not necessarily interchangeable with other aircraft fasteners approved under this TSO. Fasteners of similar dimensional properties may have widely varying performance and metallurgical properties. Substitution of parts may only be done if acceptable to or approved by the Administrator.

ITAR	ECCN Code	HTS (Schedule B) Code
N/A	(NLR) EAR 99	8803.30.00

## CERTIFICATE OF CONFORMANCE

We Certify that the furnished parts have been manufactured, inspected, tested, and unless otherwise stated above, conform with applicable specifications, drawings and purchase order requirements. Inspection, test data and/or material certifications are on file and available for examination at our facility. We further certify that these articles are of United States origin, manufactured by/for The Young Engineers, Inc.

Authorized Signature

By

*Gretchen Delaney*  
**Office Manager** *FEB 26 2014*  
 TYE 3  
 SDF-03-07

**The YOUNG ENGINEERS, Inc.**  
**Manufacturing Operations Sheet**

Work Order ID 51966

Item ID **TYE3002-3-8**

Descrip 10-32 Blind Thrd, Snap In, Alloy Stl, .010-.019 Skin Thickness, Self-Lock, .500OD X .455OAL

Job Qty 7,300 11,12-3

Lot No \_\_\_\_\_ Lot Qty \_\_\_\_\_ Date Printed 9/13/2013

Start Date 11/7/2013

Customer ID 2007

Cust PO No

Due Date 2/7/2014

Eng Planning	Manufacture Per Dwg No <u>TYE3002-108-8</u> Rev <u>D</u>				Final Inspect Per Dwg No <u>TYE3002 Series</u> Rev <u>A</u>				<input type="checkbox"/> If this box is marked, these parts were manufactured by altering the base parts identified in the Material Planning Sheet accompanying this packet			
By <u>RC</u> Date <u>9/14/13</u>	<input type="checkbox"/> Customer Release	<input checked="" type="checkbox"/> TYE Catalog	<input type="checkbox"/> Final Inspection Release	<input type="checkbox"/> Assembly Release								
PC Planning	CNC Lathe Program No <u>0482 BYE5 55sec</u> Cycle Time <u>36-A</u>				Drill / Mill	Program No _____				Cycle Time _____	Mach No _____	Mfg Approval
By <u>ES</u> Date <u>9/13/13</u>	1st Op	2nd Op	1st Op	2nd Op	1st Op	2nd Op	1st Op	2nd Op	1st Op	2nd Op	1st Op	By <u>W</u> Date <u>11/7/13</u>
Seq ID	Operator Initial	Work Center	Operation Description	Inspection				1st Rec / Art	Quantity	Ac#	Re#	QA Stamp
10			WOP Standard Work Order Preparation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
20	<u>AG</u>		M M1 Raw Material Preparation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>						
30	<u>LL</u>	CN	CNI CNC Lathe 1st Op Machining	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>9855</u>	1	<u>φ</u>	<u>TYE</u>	<u>JAN 09 2014</u>	
40	<u>LY</u>	M	M2 Wash	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9858</u>	1				
50	<u>TD</u>	C.	C1 Hand Coin	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>9802</u>	1	<u>φ</u>	<u>TYE</u>	<u>2/13/14</u>	
55	<u>PT/GC</u>	D	D71 CNC Potting Holes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>9800</u>	1	<u>φ</u>	<u>TYE</u>	<u>2/16/14</u>	
60	<u>LY</u>	M	M2 Wash	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9800</u>	1				
70	<u>BL</u>	P	P8C Flats (Hand Load Feed)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>9770</u>	1	<u>φ</u>	<u>TYE</u>	<u>2/19/14</u>	
80	<u>LY</u>	M	M3 Tumble	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9689</u>	1				
90	<u>LY</u>	M	M2 Wash	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<u>9689</u>	1				
100	<u>TYE</u>	RMF	Cad Plate Per AMS-QQ-P-416, Type II, Class 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>9689</u>	<u>32</u>	<u>φ</u>	<u>TYE</u>	<u>FEB 25 2014</u>	
110	<u>TYE</u>	QA	Quality Assurance Final	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>96840</u>	<u>32</u>	<u>φ</u>	<u>TYE</u>	<u>FEB 25 2014</u>	

Inspection Level:  S-3 AQL 1.0  AQL \_\_\_\_\_

QA Planning By TYE Date SEP 19 2013

3 Container(s) Type:  Bucket  Weight (lbs) 81

Count Factor 8400/4

Comments: \* min TIC 2/20/14 TIA

**The YOUNG ENGINEERS, Inc.**  
 These Test Reports Apply To:

Customer Name: TYE MFG STACE

Customer P.O. No. DSW1521

Part No. 80-D1M-28

Rev No. 1

Quantity 2500

TYE Invoice No. 14

Pages this report 14

Date FEB 27 2014

Signature TYE

Work Order Package Review

TYE QA Inspector Stamp# TYE

Date: FEB 26 2014



# The YOUNG ENGINEERS, Inc.

## Manufacturing Operations Sheet

In Process Inspection Interval							QA Avpt	Date
Unless otherwise indicated, all operations to be inspected at			hour intervals.					
Special Inspection Interval: Operation(s)			Additional Inspection Interval Requirements				QA Avpt	Date
Op No	Inspect Time	Type/Count	Total Pieces Accept/Reject	Sample Size	Sample Ac/Re	QA Stamp		
				Ac #	Re #			
30	4:00	P/8	1	1	1	1	TYE	1/9/14
30	10:00	3C-A	400	8	8	0	S	1/9/14
30	14:00	3C-A	3600	5	5	0	TYE	1/9/14
30	18:00	3C-A	150	5	5	0	TYE	1/9/14
30	22:00	3C-A	100	5	5	0	TYE	1/9/14
30	2:00	3C-A	550	13	13	0	TYE M-15	1/10/14
30	6:00	3C-A	200	8	8	0	TYE M-15	1/10/14
30	10:00	3C-A	200	8	8	0	TYE	1/10/14
30	14:00	3C-A	300	8	8	0	TYE	1/10/14
30	18:00	3C-A	300	8	8	0	TYE	1/10/14
30	22:00	3C-A	300	8	8	0	TYE	1/10/14
30	2/10:00	3C-A	0	0	0	0	TYE M-15	1/13/14
30	10:00	3C-A	150	8	8	0	TYE	1/13/14
30	14:00	3C-A	150	8	8	0	TYE	1/13/14
30	18:00	3C-A	100	8	8	0	TYE	1/13/14
30	22:00	3C-A	0	0	0	0	TYE	1/13/14
30	6:00	3C-A	400	8	8	0	TYE	1/14/14
30	10:00	3C-A	370	8	8	0	TYE	1/14/14
30	14:00	3C-A	350	8	8	0	TYE	1/14/14
30	18:00	3C-A	250	8	8	0	TYE	1/14/14
30	22:00	3C-A	250	8	8	0	TYE	1/14/14
30	6:00	3C-A	570	8	8	0	TYE	1/14/14
30	10:00	3C-A	230	8	8	0	TYE	1/15/14

In-Process Locking Torque Register (Bolt Number)

NAS 1096-3-7

Bolt PO Number 136540

Wrench Tool No 1027

③  
6-0-4-C  
6-0-4-C  
5-5-3-5  
5-5-3-5  
6-0-4-C  
6-0-4-C  
6-0-4-C

Comments and/or Special Instructions



# The YOUNG ENGINEERS, Inc.

## Manufacturing Operations Sheet

Job No 51964Part No TYE 3002 -3-B

## In Process Inspection Interval

Unless otherwise indicated, all operations to be inspected at 4 hour intervals.

QA Apvl

TYE

Date 1/16/14

## Additional Inspection Interval Requirements

Special Inspection Interval: Operation(s) \_\_\_\_\_ Interval \_\_\_\_\_ QA Apvl \_\_\_\_\_ Date \_\_\_\_\_

Op No	Inspect Time	Type/Count	Total Pieces Accept/Reject	Sample Size	Sample Ac/Re		QA Stamp	Date	Notes
					Ac #	Re #			
30	6:00	3C-A1	400	8	8	0	TYE	1/16/14	
30	10:00	10	370	20	8	0	TYE	1/16/14	
30	14:00	3C-A	300	5	5	0	TYE	1/16/14	
30	18:00	3C-A	200	8	8	0	TYE	1/16/14	
30	22:00	3C-A	200	8	8	0	TYE	1/16/14	
30	6:00	3C-A	500	8	8	0	TYE	1/17/14	
30	10:00	3C-A	500	8	8	0	TYE	1/17/14	
30	14:00	3C-A	400	8	8	0	TYE	1/17/14	
30	18:00	3C-A	215	8	8	0	TYE	1/17/14	
30	18:15	LIP	All	1	1	0	TYE	1/17/14	
50	13:30	F/A	1	1	1	0	TYE	2/3/14	7.0-S-0
50	6:00	3M	8,000	20	20	0	TYE	2/4/14	5.0-4.0/50-4.0 6.0-S.0/5.0-4.0
50	7:00	LIP	All	1	1	0	TYE	2/4/14	6.0-S-0
55	12:00	F/A	1	1	1	0	TYE	2/6/14	
55	7:00	3M	403	8	8	0	TYE	2/7/14	
55	10:00	3M	900	13	13	0	TYE	2/7/14	
55	14:00	11	500	8	8	0	TYE	2/7/14	
55	10:00	4	2200	13	13	0	TYE	2/8/14	
55	18:00	3M	800	13	13	0	TYE	2/11/14	
55	22:00	3M	800	13	13	0	TYE	2/11/14	
55	18:00	3M	3900	20	20	0	TYE	2/12/14	
55	19:00	LIP	All	1	1	0	TYE	2/12/14	

In-Process Locking Torque Register (continued)

Comments and/or Special Instructions \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_



# **The YOUNG ENGINEERS, Inc.**

## **Manufacturing Operations Sheet**

Job No 519664 Part No TYE 3002-3-8

Part No TYE 3002-3-8

### In Process Inspection Interval

Unless otherwise indicated, all operations to be inspected at 7 hour intervals.

QA April

Date 19 2012

#### **Additional Inspection Interval Requirements**

**Special Inspection Interval: Operation(s)**

## Interval

24 Amud

10

**In-Process Locking Torque Register (continued)**

**Comments and/or Special Instructions**

**The YOUNG ENGINEERS, Inc.**  
**Material Planning Sheet**  
**Work Order ID 51966**

Parent Item ID **TYE3002-3-8**

Item Description **10-32 Blind Thrd, Snap In, Alloy Stl, .010- .019 Skin Thickness, Self-Lock, .500OD X .455OAL**

Job Qty 9,500	Lot No	Lot Qty	Due Date	Date Printed 1/7/2014	Engineering Approval				
Component Item ID/ Item Name	Mfg / Purch	Primary Location	Last Location	Unit of Measure	Qty on Hand	Qty To Pick	Qty Issued	QA Stamp	Date Issued
1/2 4130 Cond F Steel Bar(s) per AMS-S-8758: (125 - 145 UTS)	Purchased			Bar	90	48	48		48

Location	Lot / Heat	PO No	Loc Qty	Loc Code
STOCK BAR	A1332U	140935	90.0 90.0	48/1 1/17/14 TS

TYE JAN 07 2014

**The YOUNG ENGINEERS, Inc.**  
**First Article Inspection Report**

Job No 51966 Part No TYE 3002-3-8 Date 1/9/14 Page 1 of 2

Document(s) Used:  TYE Production Release  Other

Document No TYE 3002-3-8

<sup>2</sup>  
<sup>2</sup>

Rev D

Job Qty 9,500

Qty Submitted 1

Qty Accept 1

Qty Reject 0

Name of Inspector V. RUIZ

NCR No<sup>1</sup>

Visual Inspection:  Acceptable  Not Acceptable<sup>1</sup>

OP No.	Item No	Drawing Dimension (.000: ± .005" Unless Indicated)	Actual Dimensions (low/high)	Ac	Re <sup>1</sup>	Instrument Type	Serial No
30	1	φ .446	.447	OK		CAL	T621
	2	φ 250 ± .002	.2493	OK		BLADE MIC	T099
	3	.050	.050	OK		CAL	T621
	4	2X R.015 ± .010	.009 - .011	OK		COMP	T588
	5	.455	.456	OK		CAL	T621
	6	.015 ± .002	.0160	OK		COMP	T588
	7	.120	.121	OK		COMP	T588
	8	16-20 TPI X 25 ± 5°	20 TPI X 30°	OK		COMP	T588
	9	15° BK	15° BK	OK		COMP	T588
	10	φ 470 ± .002	.4695	OK		BLADE MIC	T099
	11	60° ± 30°	60°	OK		COMP	T588
	12	.021 ± .002	.0211	OK		COMP	T588
	13	.330 MFT	.336 MFT	OK		T-GAGE	T561
	14	.030 MIN	.040 MIN	OK		COMP	T588
	15	φ 480 ± .002 AK	.4816 AK	OK		OD MIC	T622
	16	φ .500	.501	OK		CAL	T621
	17	1900-32 UNJF 3B	OK PERT T-GAGE	OK		T-GAGE	T561
	18	MINOR φ 1605-1615	161601-167 NO	OK		PINS	T519
	19	PD .1705 - .1730	.1719	OK		PD   ITC	T544
	20	FA .1705 MIN	.1724	OK		FD /MASTER ESC	T544
	21	φ .205 X 60 ± 30°	.206 X 60°	OK		SES KING	A/B/T544
	22	.125	.125	OK		COMP	T588
						PROTRACTOR	T426
20	23	77.005 MAX	.005 MAX	OK		SR	T254
50	24	.16 ± .010	.162	OK		DROP IND	T592
55	25	.246	.245	OK		Comp	T521 2/3/14
						CAL	T428A 2/6/14

Remarks (Refer to Item No) MEMO 02

<sup>1</sup> See Nonconformance Report for disposition, if applicable.

# **The YOUNG ENGINEERS, Inc.**

## **First Article Inspection Report**

Job No 51966 Part No TYE 3002-3-8 Date 2/6/14 Page 1 of 1082

Document(s) Used:  TYE Production Release  Other

Document No TYE 3002 - (08) - 8

Job Qty 9,500

Rev D

Job Qty 9,500

Qty Submitted

Date 2/6/14 Page    of 1052

Name of Inspector R. TORRES

Qty Submitted 1 Qty Accept 1 Qty Reject 0

**NCR No<sup>1</sup>**

Visual Inspection:  Acceptable  Not Acceptable<sup>1</sup>

**Remarks (Refer to Item No)**

<sup>1</sup> See Nonconformance Report for disposition. If applicable.

**The YOUNG ENGINEERS, Inc.**  
**Final Inspection Report**

Job No 51966 Part No 77E3002-3-8 Date FEB 25 2014 Page 1 of 1  
Document(s) Used:  TYE Catalog Print  Final Inspection Release  Customer Release  Other  
Document No 77E3002 SERIES Rev A  
Single Sampling Inspection Per ANSI/ASQC Z1.4 - 1993 [Level S-3, AQL 1.0]:  Yes  No [Level        AQL       ]  
Final Qty 9684 Sample Size 32 Qty Accept 32 Qty Reject 0  
Name of Inspector Frederickson NCR No

**Remarks (Refer to Item No)**

See Nonconformance Report for disposition, if applicable.

**The YOUNG ENGINEERS, Inc.**  
**Final Inspection Torque Test Record**

WO No 51966 Part No 10002-3-8 Date FEB 25 2014 Page 1 of 1  
 Thread Locking Values Per:  NASM-25027  TYE Specification  Other  
 Test Method/Sample Size Per:  NASM-25027  TYE Specification  Other  
 Acceptable Limits: Maximum Locking Value [In-lb] 18.0 Minimum Breakaway Value [In-lb] 2.0  
 Lot Qty 9684 Sample Size 5 Qty Accept 5 Qty Reject 0  
 Bolt Part No NAE1096-3-7 Bolt Lot No 136540 Instrument Serial No 7221  
 Name of Inspector Engenier NCR No<sup>1</sup> \_\_\_\_\_

Sample No	Max (1)	Break (1)	Max (7)	Break (7)	Max (15)	Break (15)	Ac	Re <sup>1</sup>
1	8	7	6	6	5	5	RE	RE
2	8	7	5	5	5	5	RE	RE
3	8	7	6	5	5	5	RE	RE
4	9	8	6	6	6	5	RE	RE
5	7	6	5	4	4	4	RE	RE
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								

<sup>1</sup> See Nonconformance Report for disposition, if applicable.

\* Identifies Potting hole Side (On Double Coined Parts)

3C-A 35 sec

**The YOUNG ENGINEERS, Inc.**  
**Manufacturing Process Count Card Form**

Work Order ID <u>51966</u>							
Operator Name	Pre-Process Count	Seq ID	Standard Process ID	Process Quantity	Operator Initials	Tool Cage Approval	Parts Lost*
Alex	0	20	M1	9500	AG	AG	
HL	0	22	CN1	60	HL	HL	
VIETNG	c	"	"	750	m	m	
MG	Q	26	CN1	450	MG	MG	
HL	0	20	CN1	270	HL	HL	
VIETNG	c	"	"	650	m	m	
MG	Q	30	CN1	590	MG	MG	
VIETNG	c	"	"	600	m	m	
MG	Q	36	CN1	360	MG	MG	
HL	0	20	CN1	410	HL	HL	
VIETNG	"	"	"	630	m	m	
MG	Q	30	CN1	440	MG	MG	
HL	0	20	CN1	520	HL	HL	
VIETNG	c	"	"	220	m	m	
MG	Q	30	CN1	430	MG	MG	
HL	0	20	CN1	360	HL	HL	
VIETNG	c	"	"	650	m	m	
MG	Q	30	CN1	400	MG	MG	
HL	0	20	CN1	500	HL	HL	
VIETNG	"	"	"	750	m	m	
MG	Q	30	CN1	725	MG	MG	
Leanne	9858	40	M2	9858	LY	LY	
David	9858	50	C1	6000	TD	TD	40
Final Quantity				Total Parts Lost			

\*Includes setup &amp; test pieces, etc.

Comments \_\_\_\_\_

***The YOUNG ENGINEERS, Inc.***  
**Manufacturing Process Count Card Form**

Work Order ID 51966

**\*Includes setup & test pieces, etc.**

### Comments

Reid Metal Finishing  
3110 West Harvard  
Santa Ana, CA 92704  
Phone: (714) 549-3771  
Fax: (714) 549-3008

## CERTIFICATION

P/L # 91927

02/24/2014

**SOLD TO:**

YOUNG ENGINEERS INC (THE)  
PO BOX 278  
LAKE FOREST, CA 92609-0278

**SHIP TO:**

YOUNG ENGINEERS INC (THE)  
25841 COMMERCENTRE DRIVE  
LAKE FOREST, CA 92630

Ship: RMF Truck 1

Net 30 Days

UNITS SHIPPED	PART #	DESCRIPTION	PO #	RMF #	REF #
9,689 qty	TYE3002-3-8		141782	94025	51966
0 B/O	81.00 lbs.				

**WE HEREBY CERTIFY COMPLIANCE TO THE BELOW REFERENCED PROCESS SPECIFICATION(S).**

Cadmium Plate Type II Class 2 Chromate

Color: GOLD

AMS-QQ-P-416

Rev: C

CI 2-ID Thread-Meets Thickness Requirements: .0003 Min .0008 Max.

Minimum Thickness Required

Sampling IAW ANSI / ASQC Z1.4 S-4-1993, Defects within a given batch or lot will be zero.

TYE  
3  
FEB 25 2014

Q.C. MANAGER:

*Jules Argos*

Processes are performed by RMF in accordance with the latest revisions or superseding specifications. This certification also meets the requirements for designs and drawings developed under older revisions and/or non-current specifications. An Electrode Technologies, Inc., Company.

 Nadcap

RA  
54

The Young Eng'r's PO# 140935



KIVETON PARK STEEL  
LIMITED

REGISTERED OFFICE: KIVETON PARK, SHEFFIELD, S26 6NQ.

TEL: (01909) 770252.  
EMAIL: [kps@kpssteel.co.uk](mailto:kps@kpssteel.co.uk)

FAX: (01909) 772649/773889.  
WEBSITE: [www.kpssteel.co.uk](http://www.kpssteel.co.uk)



CIVIL AVIATION AUTHORITY REF NO: AIV105348.  
RAF TRADE APPROVAL: RA/PSA/PART/7043

AIRBUS U.K. APPROVAL NO: AUV8A/0008.  
AS/EN9100 REV B, BS EN ISO9001:2008 & AS9100C FM9100.

**CERTIFICATE OF CONFORMITY/ APPROVED CERTIFICATE:**

ID: BARBOND INTERNATIONAL,  
A DIVISION OF KIVETON PARK STEEL LIMITED,  
KIVETON PARK,  
SHEFFIELD,  
S26 6NQ.

NO: L0548.  
DATE: 28TH JUNE, 2013.  
ORDER NO: 3008-S.  
WORKS ORDER NO: KP 26138/CB 50791  
SIZE: 4970.5000" DIAMETER.  
INCOMING R/NOTE NO: 00448298/1.

**SPECIFICATION:**

E4130 F4 AMS-S-8758A MIL-S-8758B AMS8346A AMS2301K AMS2304B AMS8370N (TO CHEMISTRY ONLY)  
ASTM A331-85 ASTM A108 REV 7 AMS8348C AMS A22 REV 7 SAE AMS-STD-2154A 6S100  
PIERCE SPAFFORD, MELTED AND PROCESSED IN THE U.K.

Test Ref:	Weight:	SPECIFIED PROOF STRESS Tpsi/M/min <sup>2</sup>	MAX STRESS Tpsi/M/min <sup>2</sup>	Elongation		Brinell		HV	HRC	Impact P.L. in Joules	R/Area
				GL	%	Test Specimen	Range on BARS				
S 7538	572	113	132	2.0"	21.6						67.0
S 7540	580	113	133	2.0"	21.0						68.0
S 7541	594	113	133	2.0"	20.8						67.0
Specification:	(2.1) 100KPSI	135/145KPSI	17% MIN								55% MIN

**REMARKS:**

HARDENED, TEMPERED AND COLD DRAWN.  
RAW MATERIAL SOURCE: TATA STEEL U.K. LIMITED.  
TATA STEEL INSPECTION CERTIFICATE ATTACHED.  
DECARBURISATION: UPTO .012" PARTIAL.

MT # 2893

TYE QA Inspector Stamp # TYE

**HEAT TREATMENT DETAILS:**

HARDENED	SPECIFIED: 840°C/900°C	ACTUAL: 860°C OQ.	Date: DEC 09 2013
TEMPERED	NONE SPECIFIED	600°C AC.	

Cast No.	C.	Si	Mn	P	S	Cr	Nb	Ni	Cu	Sn	Al	V	Tl
A13320	.3050	.2700	.5300	.0110	.0013	.9800	.1800	.1300	.1600	.0100	.0240	.0020	.0003

**CERTIFIED:**

That the whole of the supplies detailed hereon have been inspected, tested and - unless otherwise stated above conform in all respects with the requirements of the contract/order. The quality control arrangements adopted in respect of these supplies have accorded with the conditions of our K.P.S. registration.

Signed: John C. L. L.

Date: 27/6/13

Approved signatory for and on behalf of K.P.S.

Inspectors Stamp  
K.P. Aero.

1

**CERTIFIED:**

That unless stated above the whole of the above mentioned materials have been manufactured, tested and inspected in accordance with the terms of the contract/order applicable thereto and conform fully to the standards/specifications quoted hereon.

Signed: John C. L. L.

Date: 27/6/13

Approved signatory for and on behalf of K.P.S.

**MRS. J. CARROLL  
Q.C. SECRETARY**

*CK 11/12/13*



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.KLXaerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO27256**

LNE#	QUANTITY U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MPR DATE	EXP DATE
2	500 EA	MS24694S50		65121	MAC FASTENERS	0RPT4		

  
01/28/15  
Jason Lewis  
Senior Director, Global Quality

**MAC FASTENERS, INC.**  
**1110 ENTERPRISE**  
**OTTAWA, KANSAS 66067**

**CERTIFICATE OF CONFORMANCE  
AND  
MANUFACTURER'S AFFIDAVIT**

**CUSTOMER:** B/E AEROSPACE

**PO:** 0KTR91

**PART NUMBER:** MS24694-S50

**REV:** 2

**LOT NUMBER:** 65121

**MANUFACTURED QUANTITY:** 270,000

**MILL HEAT NUMBER:** 8172051

**COUNTRY OF ORIGIN:** UNITED STATES OF AMERICA

**DFARS 252.225.7009 Compliant**

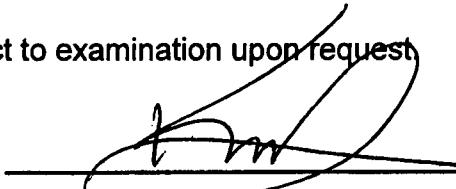
**MERCURY FREE CERTIFICATION**

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

**DATE:** 01/21/14

  
**QUALITY ASSURANCE REPRESENTATIVE**

MAC FASTENERS, INC.  
1110 EAST ENTERPRISE  
OTTAWA, KS 66067

## CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER B/E AEROSPACE	PO NUMBER 0KTR91	MFG QUANTITY 270,000	DATE 01/21/14
PART NUMBER MS24694-S50	REV 2	LOT NO 65121	PROCUREMENT SPEC NASM7839

MATERIAL TYPE 8740				MATERIAL SPECIFICATION MIL-S-6049/AMS6322				MILL HEAT NUMBER 8172051				SUPPLIER JOHNSTOWN		
C .40	Si .25	Mn .86	P .010	S .011	Cu .09	Ni .44	Cr .49	Mo .22	V .003	B Sn 006	Fe Other	Al .026	Ti	
Co Co	N N	Bi Bi	Pb Pb	Mg Mg	Zn Zn			Nb Nb						

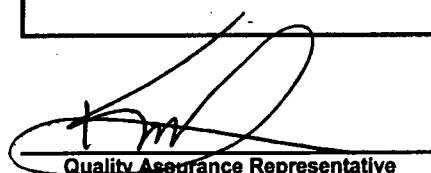
### MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	DOUBLE SHEAR STRENGTH POUNDS / PSI	HARDNESS
TOO SHORT TO TEST PER NASM1312-8	NOT REQUIRED	ROCKWELL "C" SCALE
MIN. REQ.	MIN. REQ.	REQ. 26 - 32 HRC
		SAMPLE SIZE 13
		ACTUAL RESULTS 27 - 30 HRC

METALLURGICAL EXAMINATION			
Discontinuities	<input checked="" type="checkbox"/>	Carb/Decarb	<input checked="" type="checkbox"/>
Grain Flow	<input checked="" type="checkbox"/>	Microstructure	<input checked="" type="checkbox"/>
Grain Size	<input checked="" type="checkbox"/>	Appearance	<input checked="" type="checkbox"/>
Thread Inspection FED-STD-H28/20 - ASME B1.3	System <input type="checkbox"/> 21	System <input checked="" type="checkbox"/> 22	System <input type="checkbox"/> 23

### TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.



Quality Assurance Representative

AS9100C REGISTERED  
SAI GLOBAL - 0058029

MAC FASTENERS, INC.  
1110 ENTERPRISE  
OTTAWA, KANSAS 66067

## HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 01/21/14

PO NUMBER: 0KTR91

MANUFACTURED QUANTITY: 270,000

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 65121

MATERIAL: TYPE 8740

PART NUMBER: MS24694-S50

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

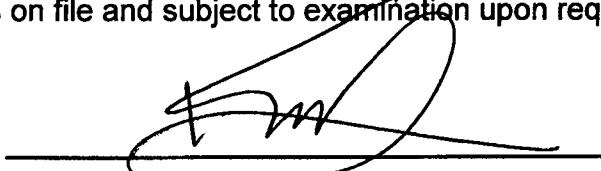
SAMPLE SIZE: 13

HARDNESS: 27 - 30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.



QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Registered Company - SAI GLOBAL - 0058029



**Johnstown  
Wire  
Technologies**

124 Laurel Ave,  
Johnstown, PA 15906

Phone: 814-532-5680  
Fax: 814-532-5684

WORK ORDER  
883637

**TEST REPORT**

LOT NUMBER

K-8172051

SALES ORDER / RLS  
002641 / 1

SOLD TO

Mac Fasteners, Inc.  
C/O TD Logistics Inc.  
14505 W 100th Street  
Lenexa, KS 66215  
USA



CUSTOMER P.O.	CUSTOMER PART	QUANTITY	COILS	LADING NO	SHIPMENT DATE
50516		27,381 LBS	14	00120503	10/22/2013

**SPECIFICATION MacFast-87186**

AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation  
Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod  
Spherodize Annealed In Process Heavy Phos & Light Lube Ctd  
Size: .1865 +.001 -.000

**CERTIFICATION REQUIREMENTS**

**Chemical**

C	Mn	P	S	Si	Al	Ni	Cr	Mo	Cu	V
.40	.86	.010	.011	.25	.026	.44	.49	.22	.09	.003
Cb	Ti	N	Sn							
.001 ???????	.0043		.006							

**Physical**

AMS 2301	J1	J10	J11	J12	J2	J3	J5	J4	J6	J7	J8	J9
0000	58	42	39	38	57	56	55	56	54	51	48	45

MacroClean E-381  
111

**Mechanical**

TEST	UNITS	HIGH	LOW	AVERAGE
Tensile Str	Lbs/SqIn	83000	80000	81000
RA Per Cent	Percent	73.1	71.9	72.5
Decarb FFD	Inches	.000	.000	.000
Surface def. depth	Inches	.000	.000	.000

**Rod / Melt Source**

Rod Source	Melt Source	Country of Origin	Nafta
Republic	Republic	USA	Yes

End of Certification

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWL A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested

*Daniel J. Malik*  
Daniel J. Malik, Director of Quality Assurance



## CERTIFICATE OF TESTS

1807 BABY 28TH RD.  
PHONE: 330-838-5580DOLAIN, OH 44055  
FAX: 330-838-5595

REPUBLIC STEEL

6/25/2013  
11:08:00 AM  
PAGE 1 OF 2PURCHASE ORD: 84084  
PART NUMBER: PXT40AA-.375  
ORDER NUMBER: 1547434 - 01  
HEAT: 8172051PURCHASE ORDER DATE: 3/4/2013  
ACCOUNT NUMBER: 5672-1921-01  
SCHEDULE: 6101-93  
REVISION: 1

===== CHARGE ADDRESS ===== SHIP TO =====

JOHNSTOWN WIRE TECHNOLOGIES  
124 LAUREL AVE  
JOHNSTOWN, PA 15906JOHNSTOWN WIRE TECHNOLOGIES  
EDWARD ZAPOLA  
C/O C & BL RAILROAD  
TRACK 629  
JOHNSTOWN, PA 15901----- MATERIAL DESCRIPTION -----  
HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA  
10.3 AMS G322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS  
JOHNSTOWN WIRE SPEC PART NO. PXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK &  
UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGASSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY  
RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTSSIZE: RDS .3750 DIAM X COIL  
RDS 9.5250MM DIAM X COIL

## ----- LADLE CHEMISTRY -----

C	MN	P	S	SI	CU	NI	CR
0.40	0.86	0.010	0.011	0.25	0.09	0.44	0.49
V	MO	SN	AL	B	CB	N	
0.003	0.22	0.006	0.026	0.0001	0.001	0.0043	

## ----- CALCULATED TESTS -----

REDUCTION RATIO 1,177.6 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER ASTM A29.

## ----- SEMI - FINISHED RESULTS -----

JOMINY HARDNESS TEST SAE J406/ASTM A255  
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32  
58 57 56 56 55 54 51 48 45 42 39 38 36 34 33 32 31 30 29 29 28 28MACRO ETCH TEST ASTM E381/MIL STD 430  
ETCHANT: HCl. TEMPERATURE: 170

Avg	S	R	C
1	1	1	

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300

IND	AVG	IND	AVG
FREQ	FREQ	SEV	SEV
PCE 03	0	0	0

## ----- FINISHED SIZE RESULTS -----

DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558  
ETCHANT = NITAL MAGNIFICATION = 100X

SPIKE	COMPLETE	TOTAL
INCHES	INCHES	INCHES
PCE 6579	0.002	0

G. KRUTH BY DEBORAH STOKES  
DIRECTOR QUALITY ASSURANCE

# DE TRAY

## Plating Works

Specialized Electro-Plating and Polishing  
*Nickel*  
*Copper*  
*Decorative Chrome*  
*Satin Chrome*  
*Zinc*  
*Cadmium*  
*Passivate*  
*Bright Dip*  
*Strip Copper*  
*Descale*

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052  
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com

January 17, 2014

Mac Fasteners  
1110 East Enterprise Street  
Ottawa, Kansas 66067

Subject: Certification

This is to certify that the following parts have been cadmium plated per QQ-P416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 3. Please reference our Invoice# 176159 dated 1/17/2014 for:

Lot#- 65121

P.N.- MS24694S50

James T. Pierson, Vice-President



DE TRAY PLATING WORKS



P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191  
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR  
www.KLXaerospace.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

### Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to KLX Aerospace Solutions.

**FIRM: DART AEROSPACE LTD**

**PURCHASE ORDER#: PO27256**

LNE#	QUANTITY U/M PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
3	200 EA MS21209P7-15		786832	EMHART TEKNOLOGIES L	01556		

  
01/28/15  
Jason Lewis  
Senior Director, Global Quality

**Certificate of Compliance**

To: B/E Aerospace Consumables  
Mgmt.  
P.O. Box 025263  
Miami FL 33162-5263

Customer's Order No. 0SYW08  
Sales Order No. 537928 SO  
Shipping Date 04/08/14

*Non-transferable*

PART NUMBER	CONTROL NUMBER	I/A/W	QUANTITY
3591-7CN656	713984 (W-5049871)	MS21209F7-15	131.000
	Country of Origin: US		
3591-7CN656	713984 (W-5049871)	MS21209F7-15	6.000
	Country of Origin: US		
3591-7CN656	786832 (W-5054121)	MS21209F7-15	14863.000
	Country of Origin: US		

We, STANLEY Engineered Fastening certify that all items listed above and supplied on the above mentioned Purchase Order have been inspected and comply in every way with the relevant drawings and/or specifications in accordance with your requirements.

We further certify that all stainless steel inserts supplied on the above Purchase Order have been inspected and comply in all respects with the applicable drawings and with the chemical composition and physical property requirements of AS7245 Rev A and ASME SA-479. All testing & sampling plans apply per NASM8846 Rev. 1.

In addition, those stainless steel inserts covered by National Aerospace Standards MS21208, NASM21209 Rev 3, NASM122076 thru NASM122275 Rev 1, NASM124651 thru NASM124850 Rev 1, MS9018 Rev A and National Aerospace Specification NASM8846 Rev 1 are certified to conform thereof.

We also certify that all inconel inserts supplied on the above Purchase Order have been inspected and comply in all respects with the applicable drawing and with the chemical composition and physical property requirements of AS7246 Rev NEW. All testing & sampling plans apply per NASM8846 Rev. 1.

We further certify that Tangless® inserts are in conformance with NAS1130 Rev 5 and NA0276 Rev 3. Tangless is a registered trademark of Advanex, Inc. (JP) used under license.

Metric Heli-Coil® inserts are covered by the following Aerospace Standards MA3279 Rev B, MA3280 Rev B, MA3281 Rev B, MA3329 Rev C, MA3330 Rev C, MA3331 Rev C and MA1565 Rev A.

STANLEY Engineered Fastening maintains a single standard of quality and the Quality Assurance Program has been designed to comply with the requirements of ISO 9001:2008, AS9100:2009 Rev C, and TS16949:2009.

We further certify that the parts supplied are free from mercury contamination and that mercury in any form, including mercury thermometers, was not used in manufacture or testing of the parts.

DFARS 252.225-7009 applies to articles containing specialty metals. We further certify that any tools and kits with an NSN number and Heli-Coil wire inserts supplied on the above Purchase Order comply with the requirements of section 252.225-7015 of DFARS.

The Quality Assurance Program, inspection records, chemical composition and physical analysis reports and special process certification are available for your review at our plant in Danbury, Connecticut at any time during normal business hours.

We also certify that all brass inserts supplied on the above Purchase Order have been inspected and comply in all respects with the applicable drawing and with the chemical composition and physical property requirements of ASTM "B16".

Authorized Signature

*Debra Graham*

Emhart Technologies LLC, a business division of  
Firm STANLEY Engineered Fastening

A Stanley Black & Decker, Inc. Company

*This certificate of compliance is valid only when issued by STANLEY Engineered Fastening, 4 Shelter Rock Lane, Danbury, Connecticut 06810 or its authorized distributors. Any correspondence should reference the control number.*

PERT, J. ON  
ERIN, ON  
DUMAS, AR  
LANCASTER, SC

813-267-3752 FAX 613-287-6617  
519-833-9632 FAX 519-833-2213  
870-382-2880 FAX 870-382-8988  
803-283-3353 FAX 803-283-6303



## Drawing on Innovation CENTRAL WIRE INDUSTRIES

**FOND DU LAC, WI** 920-926-0609 **FAX** 920-926-0662  
**UNION, IL** 815-923-2131 **FAX** 815-923-2128  
**PERRIS, CA** 951-657-2105 **FAX** 951-943-8061

THE LEADING MANUFACTURER OF STAINLESS STEEL AND NICKEL ALLOY WIRE PRODUCTS  
EXECUTIVE OFFICES: PERTH, ON CANADA - EMAIL: [sales@centralwire.com](mailto:sales@centralwire.com)

**CENTRAL WIRE INDUSTRIES LTD.**  
1 NORTH STREET, PERTH, ONTARIO, CANADA K7H2S2  
TEL: 613-267-3752 1-888-267-3761  
FAX: 613-267-3929/2951 SALES FAX: 613-267-5617

EMHART TECHNOLOGIES LLC  
P.O. BOX 50918  
INDIANAPOLIS  
IN 46250  
USA

## **CERTIFICATE OF CONFORMANCE**

SHIP TO  
EMHART TEKNOLOGIES LLC  
SHELTER ROCK LANE  
DANBURY  
USA

CUSTOMER'S PO NO. 841702	TYPE OF CERT Customer	CUSTOMER 110394	ORDER NO. 2028851	7	WORK ORDER 5054121	DATE SHIPPED 12/20/13
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**SPECIFICATIONS:**

MS2 Issue CE, AS7245 Rev.A paragraphs 2 & 3.1.

P/n: WR-WC-0475 ✓

W-5054121

ITEM DESCRIPTION		SPEC. CLASS	HEAT
CHQ 304 FULL HARD Bright .0475 500LB PLReel Clean	DESCRIPTION Melt mill NAS Country of origin USA		J7A7 025

CHEMICAL ANALYSIS						
C .0709 ✓	SI .3795 ✓	MN .4865 ✓	P .0260 ✓	S .001 ✓	CR 18.0395 ✓	NI 8.0065 ✓
MO .1490 ✓	FE Balance ✓	CU .2040 ✓	N .0511 ✓			

Wire was solution annealed at 1900F min before final draw  
Passed cold bend, coil and stretch test. / Tested to ASTM A479-04  
Raw material is DFARS 252.225-7009 compliant. ✓ Rod produced by USA

The material as shipped is free from mercury contamination. I certify the chemical analysis and physical and mechanical test results reported above are correct as contained in the records of the company.

Very truly yours

Cathleen

**AUTHORIZED SIGNATURE**



# TORQUE TEST REPORT

Stanley Black & Decker

PART NUMBER	WIRE LOT NUMBER	WORK ORDER NUMBER	WORK ORDER QUANTITY
3591-7CN656	W-5054121	786832	25000
THREAD SIZE	SPECIFICATION NUMBER	UNITS	MACHINE NUMBER
7/16-20 S/L	PP3	LB-IN	369

PLATED

AFTER H/T

BEFORE H/T

1st PIECE

IN-PROCESS

FINAL

S P E C S	1st. CYCLE		7th CYCLE		15th CYCLE	
	INSTALLATION		BREAKAWAY		INSTALLATION	
	100 LB-IN	MAX	14 LB-IN	MIN	100 LB-IN	MAX
TEST RESULTS						
1	49.2	MAX	42.4	MIN	31.2	MAX
2		MAX		MIN		MAX
3		MAX		MIN		MAX
4		MAX		MIN		MAX
5		MAX		MIN		MAX
6		MAX		MIN		MAX

DISPOSITION	INSPECTOR	DATE
ACCEPTED	2592	3.24.14